

AMENDMENTS TO THE DRAWINGS:

In response to the Examiner's objection to the drawings, Applicants submit herewith, as a separate filing, one (1) sheet of replacement drawings for Figures 3 and 4, which is labeled as a "Replacement Sheet".

Attachment: Replacement Sheet

REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, are respectfully requested.

By the above amendments, new dependent claim 15 has been added which recites that the heating and calcinating steps are effective to form titanium dioxide in crystalline phase. Support for such new claim can be found in the instant specification at least at page 4, lines 18-20. A corrected sheet of drawings has also been submitted which is labeled as a "Replacement Sheet," in accordance with the Examiner's request.

In the Official Action, claims 1-14 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 4,361,598 (*Yoldas*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Independent claim 1 is directed to a method of making a catalyst comprising the steps of: mixing 1) an alcohol; 2) a titanium alkoxide; and 3) a binder in the presence of a catalytic acid to form a first mixture; heating the first mixture at a temperature at least equal to 100°C for at least 2 hours to form a second mixture; and calcinating the second mixture at a temperature of at least equal to 450 °C for at least 2 hours.

Yoldas does not disclose or suggest each feature recited in independent claim 1. For example, *Yoldas* does not disclose or suggest a method of making a catalyst as recited in claim 1. Nor does *Yoldas* disclose or suggest a catalyst manufactured by such method. In stark contrast, *Yoldas* relates to coatings for reducing the amount of light reflected from a silicon solar cell, and is concerned with improving the efficiency of silicon in absorbing solar radiation (col. 1, lines 11-43). The coatings of *Yoldas* are provided as a lower cost alternative to chemical vapor deposition, vacuum deposition and RF sputtering techniques

conventionally used in coating silicon solar cells (col. 1, lines 38-43, col. 2, lines 17-20).

Clearly, the *Yoldas* silicon solar cell coating is completely different from the catalyst made by the method of claim 1.

It is well established that "[i]f the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is 'necessary to give life, meaning, and vitality' to the claim, then the claim preamble should be construed as if in the balance of the claim." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999). Moreover, "[a]ny terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation." See, e.g., *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257 (Fed. Cir. 1989). In the present case, it is apparent that the recited catalyst which is made by the claimed method, constitutes a structural feature of such claim given that it is the product being formed by the claimed method. The recited catalyst, by definition, has structure that enables it to function as a catalyst. As such, the recited catalyst must be considered by the Patent Office for purposes of patentability, and as is apparent from the above discussion, *Yoldas* fails to provide any disclosure or suggestion of such feature.

Furthermore, *Yoldas* does not disclose or suggest heating a first mixture at a temperature at least equal to 100°C for at least 2 hours to form a second mixture, as recited in claim 1. Concerning this deficiency, the Patent Office has alleged that "applicants' apparently higher temperature would simply speed up the process of polymerization." However, even if this were true, such a modification would have been in contradiction with *Yoldas*' explicit teaching that the solution "should be aged for a few hours to permit the polymerization to proceed and stabilize [emphasis added]." *Yoldas* unequivocally discloses that it is time, and not elevated temperature, which is necessary to permit the polymerization to proceed and

stabilize. Quite clearly, *Yoldas* provides no disclosure or suggestion of any benefit of heating its solution during the ageing process, and upon a fair reading of such document, one of ordinary skill in the art would not have been motivated to heat the solution as alleged by the Patent Office, let alone at a temperature at least equal to 100°C for at least 2 hours.

For at least the above reasons, it is apparent that no *prima facie* case of obviousness has been established. Accordingly, withdrawal of the above §103(a) rejection is respectfully requested.

With regard to newly added dependent claim 15, it is noted that such claim recites that the heating and calcinating steps are effective to form titanium dioxide in crystalline phase. In stark contrast, *Yoldas* admonishes against excessive heating of the coating which results in formation of the crystalline phase (col. 5, lines 5-7). Clearly, one would not have been motivated to employ heating and calcinating steps that are effective to form titanium dioxide in crystalline phase, in light of such disclosure.

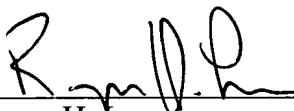
From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By:



Roger H. Lee
Registration No. 46317

P.O. Box 1404
Alexandria, VA 22313-1404
703 836 6620